

DAS Workers' Compensation Unit  
Hartford, CT  
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Summary Report  
on  
Indoor Environmental Quality (IEQ)  
at  
25 Sigourney Street Building

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## **Summary Report on Indoor Environmental Quality (IEQ) at 25 Sigourney Street Building**

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9/20/04

### Background

The State of Connecticut purchased the building at 25 Sigourney Street, Hartford Connecticut from Xerox, occupying it in 1995. The occupants were DRS (Revenue Services) on floors 15-20 and DSS (Social Services) on floors 6-14. The first five floors are for a parking garage. Over the first year of occupancy six staggered workers' compensation claims were reported pointing towards indoor air concerns. This initiated the following investigative actions:

- In August 1996, a safety officer at DSS requested Connecticut OSHA (CTOSHA) conduct a survey focusing on indoor air, ventilation and fungi. Results from the August-September survey showed unremarkable levels of fungi and carbon dioxide (CO<sub>2</sub>).
- Afterwards, another eight claims occurred. The survey was repeated in December 1998. One CO<sub>2</sub> sample was high, but was suspect as the control, an outdoor sample, was abnormally high. Results were again unremarkable.
- Three more claims occur. In August 1999 Tunxis Management (DPW's property managers for the building) requests an indoor air quality study on the 9<sup>th</sup> floor. Results are similar to 1996 (unremarkable).
- Another six claims are reported. UConn Health Center is contacted and conducts four walk-through tours from December 1999 to February 2000. They measure temperature, relative humidity, carbon dioxide, and look for wet staining/possible mold infestation areas.

While these studies were not returning conclusive evidence of contamination, claims still occurred. In January 2000 CTOSHA returned and tested two DRS areas on the 17<sup>th</sup> and 14<sup>th</sup> floors, near locations of recurrent water leaks. Some mold and mite activity were found, but no infestation was evident. H.L. Turner Company of Maine was contacted and measured fungal concentrations in wall cavities. Higher amounts were found. Water leakage evidence was found near terraces and windows. Turner recommended stopping water leaks and eliminating mold sources (contaminated/wet stained wallboard) within the walls on the 17<sup>th</sup>, 18<sup>th</sup>, and 19<sup>th</sup> floors.

### Remediation

DPW acted on Turner's recommendations starting in March 2000. By November 2000 they had repaired roof copings and caulked brick, which they estimated stopped 95% of the water

intrusion. Concurrently DPW was removing and replacing water-stained interior wallboard on floors 17-19 perimeter, and in a central area of the 16<sup>th</sup> floor. Additional repairs were as follows from 2001 to 2004:

- 2001: Cleaning, wallboard and carpet replacement, HVAC upgrades, exterior repairs including caulking
- 2002: HVAC high efficiency filters added, carpet replacement 17-19, wallboard replacement on floors, 5,17,19, wallpaper removal on 14 and 15, exterior permanent repairs, building envelope
- 2003: Envelope repairs 17-19, sheetrock replacement 16-19, roof replacement from August to December, HEPA vacuuming
- 2004: Environmental management system installed to control mechanical systems

Most employees stayed onsite throughout this remediation process, but a few more seriously ill / affected employees were placed elsewhere, in other department offices or working from their homes. In June 2004 they were cleared to return, if possible. Remediation efforts mostly occurred after hours in the later stages.

#### NIOSH Involvement

The Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH) Interim Reports I, II, III, and IV dating from January 2002 to November 2003 were just received at DAS. They show the progression of IAQ studies at 25 Sigourney, from the initial request by the affected worker Unions in 2001 to the studies conducted early in and soon after stages of abatement in 2002 and 2003.

The reports are as follows, all addressed to Mike Winkler, President, Administrative and Residual Employees Union in Newington:

- Interim Letter I – January 28, 2002 – Initial Review

Initial letter, noting first contact from affected Unions to NIOSH on July 17, 2001, subsequent preliminary NIOSH staff visit on July 26, 2001 (meeting of parties involved, tour, employee interviews, etc) and their follow-up visit on September 11-14, 2001 (administer health questionnaires).

- Interim Letter II – February 11, 2003 – Collected Data From Sampling

Summary results listed by floor of environmental data, provided to aid in targeting remediation efforts. Data also sent to the following:

Unions (AFSCME, CFEPE, CEUI, CSEA, NEHCEU, SEIU)  
Connecticut Department of Public Health  
Department of Public Works  
Department of Revenue Services  
Department of Social Services

Air and dust sampling were conducted on December 17-20, 2001 on the 17<sup>th</sup> floor to establish an historical exposure prior to carpet removal. Sampling was conducted in the rest of the building (floors 5-20, including the 17<sup>th</sup> floor) April 2-11, 2002.

o Interim Letter III – October 20, 2003 – 17<sup>th</sup> Floor Data Analysis

Summary results of cultural fungi analyses in floor dust, measured before and after carpet removal.

o Interim Letter IV – November 26, 2003 – Results of Data Analysis of Medical Questionnaire and Testing

Findings presented on fungal sampling in May 2003 and June 3-14, 2002 medical questionnaire and testing results. Letter notes these findings presented at an August 2003 stakeholder meeting as well as findings relating to building ventilation, pressurization, and visual inspection of the HVAC system.

Timeline / Important Dates:

The following are important dates in the timeline of events from 1995 to 2004. Please see attached Timeline in Appendix A for additional dates and greater detail:

1. 1995: State occupies building after purchase. DRS moves into top 5 floors (15-20). DSS moves in as well.
2. 1995 - June 2000: a total of 30 IAQ claims are reported sporadically
3. September 2000 – December 2000: another 11 are reported, marking the start of increased claim activity
4. 2001: 60 claims are reported. On July 17 Local 4200 requests NIOSH conduct a health hazard evaluation, perceiving the claims to be building-related
5. July 26, 2001: NIOSH staff visit building and conduct initial meeting with affected parties and IH vendors
6. September 11-14, 2001: NIOSH conducts a follow-up visit, administering short health questionnaires
7. December 17-20, 2001: air sampling conducted prior to scheduled carpet removal on 17<sup>th</sup> floor
8. Late December 2001: carpet removed on 17<sup>th</sup> floor
9. 2002: 47 additional claims are reported
10. April 2-11, 2002: 357 sampling sites selected, sampling conducted on floors 5 through 20 for cultural fungi in floor and chair dust
11. June 2002: NIOSH conducts medical questionnaire completion
12. August 2003: NIOSH conducts meeting on results
13. August 5, 2004: NIOSH returns to conduct a meeting with all parties to present findings and announce they will continue with their investigation, with a tentative return date in early 2005

Conclusions:

Causal Relationship:

1. There does not seem to be solid evidence that fungi levels in the building were high when compared to EPA's base study of 100 non-complaint buildings nationwide (conducted in the early 90's).
2. No one involved is saying absolutely that the building caused the claimant respiratory illnesses. Dr. Pearce at NIOSH, though, in a phone interview with DAS WC in September 2004, believes the claims here involve "real phenomena" as opposed to psychosomatic claims. Consider the following from NIOSH's Interim Letter IV:
  - a. NIOSH noted "there was evidence for new onset of symptoms or exacerbation of preexisting asthma in the seven-month period from September 2001 and June 2002."
  - b. NIOSH states "the results of the June 2002 medical survey substantiated the reporting of symptoms by the occupants of the Sigourney Street building."
  - c. NIOSH further concluded "the building environment had posed some risk to previously unaffected occupants from September 2001 to June 2002."

#### Testing Results:

3. UConn Health Center's visits and the subsequent Turner survey did find mold in wallboard, at higher levels, but not necessarily very high levels.
4. It is not clear whether or not an employee exposed to mold could develop a hypersensitivity to trace amounts of contaminants post-abatement.
5. NIOSH came to the situation when most of the wet-stained or fungi-containing wallboard was already removed. Their testing did not show significant concentrations.
6. There were measurable amounts of various fungi/molds in the 25 Sigourney Street building. The locations were primarily wallboard, which was removed.

#### Paper Study:

7. The paper study was inconclusive regarding the health hazards of opening old paper files.

#### Remediation:

8. The removal of carpeting did not significantly change the mold content.
9. Moisture control was more successful in lowering associated levels.

#### Next Steps

We have amassed the list of related claims and their costs. We have reviewed the DPW-supplied information and the NIOSH Interim Letters. We are now aware of the previous studies and the ongoing health testing NIOSH will continue to conduct. We will be receiving future NIOSH Interim Letters.

There are several choices as to DAS WC Unit's response to these studies. A few choices/suggestions:

1. Do nothing but maintain vigilance on the situation
2. Visit the building (perhaps on a rainy day?) to see if there are continuing moisture concerns (DPW has invited us to visit the building with them)

3. Confirm the schedule of future NIOSH and related studies (DPW has invited us to attend the next NIOSH meeting, tentatively set for early 2005)
4. Involve ourselves in the ongoing issues (NIOSH has added us to their mailing list for future Interim Letters.
5. Monitor claims, especially new ones or recurrences now that the abatement/remediation is essentially complete.

#### Sources

GAB claims data via Client Intelligent/Portfolio

DPW (Department of Public Works)

- White paper for Commissioner. November 2003 with August 2004 update
- Deputy Commissioner status query and DPW response email, August 2004
- DRS/DSS Intranet Issue #43 – May 2004 newsletter to all department employees
- UConn Health Center report on Back to Work Paper Project
- Environmental Health & Engineering consultant report on mechanical systems

CDC/NIOSH (Centers for Disease Control and Prevention / National Institute for Occupational Safety and Health) – 4 Interim Letters, one pending for August 2004 visit  
Hartford Courant articles in 2001 and 2004

#### Contacts

DPW: Donna Baisley, Assistant Administrator

Jacqueline Brown, Environmental Protection Program Specialist

NIOSH: Terri A. Pearce, Ph.D. – Industrial Hygienist

Deanna Cress, Program Analyst, CDC/NIOSH Respiratory Disease Hazard Evaluation & Technical Assistance Program

**APPENDIX A**      **Timeline – 25 Sigourney Street**

Year	Month	Event	IAQ Claims Newly Reported	Cumulative Count	IEQ Testing /Investigation	Remediation	Report/Results
1995		State purchases building	6	6	none	none	none
		DSS & DRS occupy floors 6-20					
1996	August	DSS safety officer requests CT OSHA survey			Fungi, air ventilation, CO <sub>2</sub> , in August & Sept.	none	Non-remarkable, little found
1997-1998			8	14		none	
1998	December	CTOSHA re-survey			Same as 1996	none	Same as 1996, plus one high CO <sub>2</sub> reading
1999	August	Tunxis requests IAQ survey	3	17	9 <sup>th</sup> floor survey as above	none	Non-remarkable, little found
1999-2000	December to February	UConn HC tours	6	23	IAQ as above, plus search for mold	none	Wet areas noted, mold found in wallboard
2000	January	CTOSHA survey			17 <sup>th</sup> and 14 <sup>th</sup> floors for recurrent water leak areas, mite activity	none	Mites found, but within norms
	January-February	H.L. Turner conducts fungal testing in wall cavities	2	25	Fungi tested	none	Fungi found in wallboard
	March to November	DPW acts on Turner recommendations	15	40		Brick caulked, roof coping repaired, wallboard removed and	

Year	Month	Event	IAQ Claims Newly Reported	Cumulative Count	IEQ Testing /Investigation	Remediation	Report/Results
2001	Throughout year	Remediation				replaced	
	July	Union (local 42) contacted CDC/NIOSH	32 (11 by end of March)	72	NIOSH arrive for testing/investigation	Cleaning, wallboard and carpet replacement, HVAC upgrades, exterior repairs including caulking	
	September	NIOSH health questionnaires	18	90	NIOSH medical research via health questionnaires	Ongoing above	Initial meeting
	December	NIOSH testing	10	100	IEQ testing prior to scheduled carpet removal	Ongoing above	
2002	Throughout year	Remediation				Ongoing above, concluding with carpet replacement after testing	
	January	NIOSH Interim Letter I received	2	102		HVAC high efficiency filters added, carpet replacement, wallboard removal, exterior permanent and envelope repairs	
	April	NIOSH conduct testing	13	115	Cultural fungi in floor and chair dust - 357 samplings	Ongoing above	Unremarkable
	June	NIOSH medical questionnaire	8	123			



Year	Month	Event	IAQ Claims Newly Reported	Cumulative Count	IEQ Testing /Investigation	Remediation	Report/Results
2003	December		24	147			
	Throughout year	Remediation					
	February	NIOSH Interim Letter II received	4	151		Envelope repairs, sheetrock replacement, roof replacement, HEPA vacuuming	
	August	NIOSH stakeholder meeting	12	163			
	October	NIOSH Interim Letter III received	5	168			
2004	November	NIOSH Interim Letter IV received	3	171			
	Throughout year	Remediation					
						Environmental management system installed to control mechanical functions	
	August	NIOSH returns for follow-up meeting with all parties	18	188			NIOSH plans to visit again in early 2005